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ABSTRACT

Three major educational goals suggested for the child are: (1) that he learn to balance a concept of himself as both an individual and a group member; (2) that he became competent so that he will feel he can influence the events that affect his life; and (3) that he develop a positive sense of self-esteem. A transactional view of development and the role of culture are discussed, and an overview of longitudinal studies which explore relationships between early child experience and later personality and intellectual development is presented. Studies which investigate the effects of different types of stimulation upon the development of the young child are discussed. The need for new measures of intellectual development in the early years is emphasized, for measures currently in use have no predictive validity. Educators should not confine their efforts to the cognitive domain, but should involve parents and the general community in all aspects of education, including decision making. (NH)

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On Early Learning:

The Modifiability Of Human Potential

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Foreword

IN 1968, when ASCD's Executive Committee conceived the program known as GNU, its members were reacting to a sense that we stood at the opening of an era. Later they were to write (in two separate papers): "In a changing society like ours, the curriculum maker has to come to decisions from very shaky ground. . . . But where can we who work in curriculum, supervision, and instruction turn today in meeting the new expectations? Apparently, we must ourselves search out the sources of help." And so they named the new effort "*G*enerating *N*ew *U*nderstandings"—and set to work to find those "sources of help."

One of the fundamental questions in need of new understandings relates to what the committee called "modifiability." To what extent must we simply settle for what the child now appears to be, as a person and as a learner? To what extent do we dare to hope that we can create added ability to learn, stimulate the development of personal powers, and rehabilitate those whose beginnings have been ill-starred? The answers to those questions make an enormous difference in what we should try to do. And, if the answers are in the direction of hope, the next question must be, "*How* can we go about doing what it is newly possible to do?"

For guidance, the Association turned naturally to one of its own outstanding members, Professor Ira J. Gordon, whose research and developmental work at the University of Florida with young children and their parents is like a cornerstone under the whole structure we need to build. We wanted him to bring to bear the most significant research from any sources, but also to give a special place to his own work. We wanted him to be scholarly in his use of data, but we also wanted him to be very free to season the whole report with his personal size-ups. We wanted him to estimate what is theoretically possible, but also to give us his developed judgment on the practical means of getting closer to the possible.

In other words, we asked Dr. Gordon to do an extremely difficult job: to comprehend simultaneously the hard data and the common sense, the theory and the action. And that is exactly what he has done. We believe you will find the views of this mature educator/researcher a valid source of help.

January 27, 1971

FRED T. WILHELMS
Executive Secretary
Association for Supervision
and Curriculum Development

On Early Learning:
The Modifiability of Human Potential

IN MODERN behavioral science we have attempted to reduce everything to sets of equations and functional relationships. We have avoided looking at goals and purposes and meanings for life. Perhaps this results from our fears of being labeled "soft" or because our thinking might be called "teleological" and therefore not respectable. Describing relationships between events is a scientific way to talk about human development. However, it may be the least satisfactory way, for educators who face value choices in determining the organization and curriculum of the school and in managing the host of school-related activities. Answering the question, development *for what*? shifts us from a purely scientific discourse into the realm of philosophy.

Development Toward What End?

What follows next is a personal view which I hope will set the stage for the presentation and discussion of empirical evidence in the remainder of this paper. Where is it we want our youth to go? We are fond of using such terms as "becoming" and assuming that the process is the end itself. We sometimes shy away from discussing what it is that youth ought to become, as if we were completely goalless. Although it is true that the world they inherit from us will be quite different from the world we inherited from our parents, I cannot accept a completely ahistorical view which leaves us helpless and hopeless in defining some broad goals upon which to base our efforts.

To substitute chaos for rigidity is no gain. Yet I also reject the attempt to define our goals in such specific behavioral bits that we lose track of the total organism which is the child. It may be that we can define goals for children in terms of certain attitudes we hope they will possess, certain general areas of ability, certain

approaches they will make in the way they deal with their fellow man. While such a definition may have all the virtue of being "for motherhood and against sin," and leave still undone the means to achieve these ends, we cannot discuss modifiability, intervention, education, without having some notion of what it is we hope to have as outcomes.

I would suggest three major goals that seem to be in keeping with what we know about man as a human being and what he is capable of becoming. *First*, each individual must solve the problem of autonomy versus relatedness, self versus other, inner versus outer, we versus they, by striving to eliminate the "versus" and substituting the word "and." We are constantly being exhorted by advocates of the "do your own thing" school who wish us to come down heavily on the autonomy side. Their view is a modern social philosophical reconstruction of Adam Smith's economic views, which led to our free private enterprise system. It is based on the naïve notion that if each of us does what he personally wishes and thinks is best, somehow or other the greatest good will be accomplished for all. Perhaps it would be nice if this were true, but we have discovered that it did not always work in the economic realm.

The converse exhortation is equally heard throughout the world, that one must subjugate his individuality for the good of the state, or some ideal goal or political dogma. This view says that individuality is a myth and that true personal freedom, if there is such a thing, emerges from subjection to authority and losing oneself in the collective. This view is equally fallacious because it denies so much of the basic biological truth about the uniqueness of the individual. A goal for American education is somehow to enable us all to learn that we are at one and the same time individuals and members of a group. We lose our individuality when we attempt to deny our relatedness, and we lose the essence of ourselves when we emphasize only our collective being.

A *second* goal for each of us is to be competent. This has descended to the level of cliché, but the ability of a person to do, to shape, to make, and to contribute must be fundamental in our hopes for him. Competence can be looked at in several ways. First, every human being must be able to influence the events that affect his own life in some fashion. The feeling of *anomie* or alienation which pervades so many people in a highly technical, complex society stems from their inability to feel that as individuals they can influence events. The forces which surround them look so huge and overwhelming that they feel diminished in their human-

ness. Education must, therefore, provide ways and means for each to feel able to make a difference. In order to do this, it is obvious that skill is important, motivation is important, attitudes toward work and learning are important, a background of experience in coping with the world in ways that lead to success is important. How do we begin to accomplish these in the early years?

Third, one way in which we can relate both the notions of autonomy-relatedness and competence is to talk about one's sense of identity, his self-concept, his self-esteem. Each person should not only *be* competent, he should not only have solved the I-Thou problem, but he should have a sense of his own self-worth. He should view himself positively, he should have pride in his being, and he should be so comfortable with himself that he is not afraid to recognize his areas of weakness and inadequacy as well as his strengths and potency.

A positive self-concept, then, does not mean arrogance, nor a false sense of omnipotence, but the ability to view oneself, to know one's humanness, to recognize one's failings as well as one's accomplishments. Each child, at least in the Western world, is expected to develop some sense of self, but his image may be anywhere on the continuum from high to low because of the way he is treated, the group to which he belongs, his economic status, and other factors that were present at his birth. The types of experiences we provide for him may make it difficult for him to develop the kind of self-concept just described. If a positive self-concept is really a goal, then we have to recognize that the modification of his development requires activities that extend far beyond a direct approach to him.

These three goals: autonomy and relatedness, competence, and self-esteem form the basis for analysis. What do we know about the factors which operate in the life of the newborn to affect his chances of attaining these goals?

A Transactional View of Development

Generally, psychologists would agree that a person's behavior at a moment in time is a function of his history of organism-environment interactions. This is a jargon way of saying that what one does right now depends upon what has happened to his body since birth, and the body that he came here with. From this simple statement, arguments have raged and are currently raging about the relative contribution of what he inherited and his experience.

This old nature-nurture argument, or heredity-environment argument, which some of us thought was happily resolved a short while ago, is of political and social importance in our plans and policies for education. Although one can apply various statistical techniques to support different sets of assumptions, my position is that what any of us is, is a function of the total of both of these, and that statistical games to decide relative amounts of variance are just that—games—and dangerous ones at that.

When it comes to dealing with individuals, such statistics are meaningless. Further, they generally operate from descriptions of the status quo:

> High or low heritability tells us absolutely nothing about how a given individual might have developed under conditions different from those in which he actually did develop. . . . The heritability of intelligence or any other trait must be recognized as still another of those will-o'-the-wisp general laws. And no magic words about an interaction component in a linear analysis-of-variance model will make disappear the reality of each genotype's unique norm of reaction. . . . norm of reaction is a developmental reality of biology in plants, animals, and people (Hirsch, 1969, p. 19).

Caspari takes essentially the same position in stating:

> High intelligence would depend, not on one pair of genes, or even a few which act additively, but on particular combinations and concentrations of several independent genes. . . . In other words, there may not exist any genes for high and low intelligence, but particular gene combinations or genotypes would result in a particular phenotype with respect to intelligence. . . . the size of the environmental variation, on the other hand, will depend on the total differences in relevant environmental conditions to which the population may be subjected. . . . The main contribution which a geneticist can make to educational research is to stress the fundamental biological fact that every human being is a unique individual and that his genetic individuality will be expressed in the way he reacts to environmental and educational experiences (Caspari, 1968, pp. 52-54).

What this means, if these geneticists are right, is that the chances for any individual to accomplish the above set goals will be determined by his own individual life experience, and his own individual biological makeup, and cannot be predicted upon the basis of his group membership. Further, even if we were to know a good deal about the child's individuality as a biological being, we still are extremely influential in what he will become by virtue of the opportunities and experiences we provide for him.

Lenneberg, in discussing language development, states:

> The nonbiologist frequently and mistakenly thinks of genes as being directly responsible for one property or another; this leads him to the fallacy, especially when behavior is concerned, of dichotomizing everything as being dependent on either genes or environment. Genes act merely on intercellular biochemical processes, although these processes have indirect effects on events in the individual's developmental history. Many alterations in structure and function indirectly attributable to genes are more immediately the consequence of alterations in the schedule of developmental events (Lenneberg, 1969, p. 638).

Just as we cannot look at the genetic contribution additively but must see it combinatorially, so too we cannot look at environment as simply having its effect on the child through the addition of straight-line facts or learning. A child's development more likely should be viewed as epigenetic; that is, as a child grows he develops new organizations, new combinations, new integrations which represent a qualitative as well as a quantitative difference from his previous level.

Piaget has examined this development mostly in the area of thought. Yet it seems to apply across the board that the existence of some structure, whether it be physical or intellectual, is followed by its use, and this use creates a new organization, a new structure, which is then put to use in a movement toward more and more complex structures. This implies, of course, that whatever the child's already existing structure is heavily influences the way he will deal with, approach or avoid, cope with or master experience. Since his present structure is a function of both his total biology and his total experience, the adults and peers who surround him must have considerable influence both in making the structure and in the use to which it is put.

If development is transactional, the next logical question is: How competent can man become? If we accept Hunt's statement that, "The assumption that intelligence is fixed and that its development is predetermined by the genes is no longer tenable," then several things become unfixed (Hunt, 1961, p. 342). The upper limits or ceiling may no longer be what we thought. Gardner Murphy's excellent work, *Human Potentialities* (1958), over a decade ago, sketched out for us how, if we are able to remake our environment and to reshape our educational system, man can transcend our present view of him. Our present measurements of intelligence, achievement, or abilities may be operating in a feed-

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back way to deter us from recognizing the potential in ourselves and our children. That is, we are so much the victims of our own world view in education and psychology that we develop our tests so that they reflect the present situation, and we use our statistics to convince ourselves of our own limits.

We define intelligence narrowly to exclude much of what has been called divergent thinking, social awareness, and interpersonal skill. Further, we have defined intelligence by measuring products—knowledge of words, facts, mathematical procedures—which reflect a traditional academic background not necessarily appropriate for many present members of our society, and maybe even less appropriate for the future. Even the substitute "soul IQ" tests reflect these same biases; they just measure a different vocabulary. We need to probe more the process of learning, and develop process measures. Further, we are so concerned with variance, with spreading people out along some sort of known dimension, that we do not spend our efforts examining the people at the upper end of even that known dimension to figure out how they got that way, and (assuming that the upper score is "good") how we can get more to be that way.

If we accept a transactional view, then we need to stop using our tests as gateposts for the denial of experience and as criteria for admission to experience, because in so doing we limit the possibilities for an individual to stretch himself. We even have some people today suggesting that we administer some sort of diagnostic test at 2½ years and decide who is fit for what. Nonsense! *First*, whatever tests exist for that age are extremely inadequate and weak to measure anything more than the smallest elements of the present behavior of the 2½-year-old, let alone to have any great predictive validity. No one knows what may happen to that child in the days ahead. *Second*, it is only if we assume a static world that our present measures have any prediction, and even here the predictions are extremely limited to certain sets of experiences. They do not account for the behavior of any particular individual, although they may be useful for actuarial purposes. In addition, present measures are influenced by cultural factors.

The Role of Culture

This brings us to the role of culture and subculture as purveyed to the young child by his immediate family or family surrogates. Perhaps examination of the relative behavior, performance, atti-

tudes, and practices of our own subcultures is the most sensitive area of behavioral research at the present time in our country. The problem of observer bias, tests with built-in middle class standards, psychological judgments without understanding of anthropological concepts, and accusations of prejudice in various directions cloud the issue.

In the political situation, rhetoric transcends science. Groups reject results because of values, and some even reject the basic assumptions of science. When results are used rapidly for political decisions, it becomes more and more difficult to see the psychologist as an aloof basic scientist, dispassionately seeking after truth. Racial and religious myths, both pro and con, enter into the research—in the choice of subjects, the types of measures, the analysis of results. One way to get beyond this is to examine, as Bronfenbrenner (1970b) has done, our culture as though it were a common one, to assume there is such a thing as the American culture which represents some shared elements which override the pluralistic components. He then analyzed our culture in comparison with the Soviet Union, using as data his own observations and the research and pedagogical literature of the Soviet Union. Bronfenbrenner is primarily concerned with character development rather than with academic achievement. He indicates that child-rearing practices, the organization of the school, and the use of the peer society are all, at least in the literature and generally in the practice, unified into a common approach to creating a new Soviet man who will be obedient, orderly, and conforming to the mode of the group in which he is reared.

Although there are signs of change in the Soviet picture, it is clear from Bronfenbrenner's work that the young child receives much maternal warmth and love. The main discipline technique is withdrawal of love. He early begins to learn that he is a member of a "collective" whether it be the family, the nursery school group, a row in school, or the young pioneer club, and that his actions and behavior should be designed to enhance that collective rather than to enhance himself. The ideal American image is self-enhancement, but Bronfenbrenner indicates that the current American family provides not only less contact and interpersonal relations with its children than it used to provide, but also less than does the contemporary Russian family. He feels that the American family has abdicated its role, because of industrialization and suburbanization, to the peer group, which then places itself in opposition to the family. Further, Bronfenbrenner feels that the mass media enhance

the chances that American youngsters will acquire an understanding of aggressive behavior via television, through seeing powerful models behave in aggressive ways without punishment, and even with reward. He suggests that the psychological principle of modeling is a potent one in child rearing and that the Soviet Union has conscientiously set about to use it, whereas it operates by chance and accident in the United States.

Let us now look closer at ourselves. If we want autonomy mixed with relatedness, competence, and self-esteem, what evidence is there—tenuous and argumentative as it may be—about the effects of membership in American populations upon the chances to achieve these goals? There are three main sets of variables which can be identified as contributing to student achievement behavior (a narrow view of competence) (I. Gordon, 1969b, 1970b). The first is the ecological set. To some degree, Bronfenbrenner's research fits in here. Surely not all American families behave as he describes, and neither do all Soviet families. Yet one can roughly identify some of the parameters of the culture. When we examine our own society as well as the data from other nations, it is clear that many factors must be considered, such as density and crowding; the physical quality of home life; level of income; membership in a social class; the pattern of family organization, particularly the presence of the father; and the ethnic group to which one belongs. All these factors contribute in some fashion—although not directly, since these are large population variables—to the opportunities that will exist and the experiences that will be provided which may enable the child to reach the goals, or to decide whether these goals are even worth reaching.

The second and third sets of variables refer to family dynamics. It is here, of course, that most of the subcultural argument occurs as to whether families with different patterns can be value rated and, if so, who is to say that one pattern of family life is superior to another. Superiority can only be judged in the long run upon some basis of a common goal; and this, of course, does not exist except in the broad general terms used earlier in this paper. Even such a goal as competence can be defined in a variety of ways and can exclude scholastic achievement within a subculture even though it is accepted by the total society. Gordon (1970b) lists nine parental cognitive factors which have been identified by laboratory or field research as influencing intellectual and personal behavior and development. These are: amount of academic guidance provided for the child; the parent's cognitive operational level and style; the

presence of planned cultural activities; the amount of direct instruction of the child; the educational aspirations for the child; the use of external resources such as kindergarten and nursery; the intellectual climate of the home as evidenced by books, etc.; the verbal facility of the parents; and the frequency of verbal contact between parent and child. The affective factors, ten in number, are: consistency of management; the differentiation of self; the disciplinary pattern; the emotional security and self-esteem of the parent; impulsivity of the parent; the parent's belief in internal versus external control of his destiny; the amount of babying and protectiveness shown toward the child; the trusting attitude of the parent toward the "establishment"; the willingness to devote time to the child; and the parent's work habits.

Hess (1969) has organized these influences in terms of the effect on the child, and lists those studies which show relationships between parental characteristics and a demand for high achievement. These characteristics are: maximization of verbal interaction; engagement with and attentiveness to the child; maternal teaching behavior; and diffuse intellectual stimulation. In the affectional domain, he lists studies of warm affective relationships with the child; feelings of high regard for the child itself; pressure for independence and self-reliance; clarity and severity of disciplinary rules; and the use of conceptual rather than arbitrary regulatory strategies in child development. Hess's and Gordon's lists obviously overlap at many points, and they cite the same authority occasionally. The heart of the matter seems to be that what the child may become is strongly influenced by the way he is brought up from the moment of birth. Not only his personality but also his level of competence will be influenced. Zigler (1970b), in his review of the role of social class, synthesizes the social-psychological orientation by suggesting that the child's development is not simply determined by his internal psychological structure, nor is it entirely a product of class membership. It can only be seen as a combination of both. As the child incorporates the values of his culture, he then seeks its rewards or reinforcements, and is further incorporated into that culture by behaving appropriately. One way of seeing this is the work of Lesser and his colleagues (Lesser, Fifer, and Clark, 1965; Stodolsky and Lesser, 1967) and Stewart and his colleagues (Stewart, Dole, and Harris, 1967). Lesser's work in New York and Boston, and Stewart's in Hawaii, focused on examining the pattern of differential achievement across various ethnic groups and social classes.

In general, these studies, using standard achievement measures, indicate not only the usual finding that middle class children achieve on this type of measure more effectively than lower class children; but also, and more interestingly, each ethnic group seems to have its own pattern of highs and lows, although the patterns are not as discrete for middle class children as for lower class children. "Ethnicity does affect the pattern of mental abilities and, *once the pattern specific to the ethnic group emerges, social class variations within the ethnic group do not alter this basic organization*" (Stodolsky and Lesser, 1967, p. 567). The most parsimonious interpretation is of differing value systems and cultural demands which relate these results to the lists of Gordon and Hess and the review by Zigler. We may infer that these differences come about because different ethnic groups teach their children that different abilities, at least as measured on these very limited tests, have different importance. Other analyses and explanations of differential performance in the cognitive area, and language in particular, may be found in Cazden (1970), Bernstein (1970), and E. Gordon (1970).

When we turn to problems of motivation, self-esteem, and feelings of competence, we can draw primarily on Zigler, Bronfenbrenner, and, interestingly enough, Piaget. As E. Gordon states:

> It is in the area of attitude towards self and others that the crucial determinants of achievement and upward mobility may lie, and it is in these areas that our data are least clear. . . . Furthermore, it is in this area that the rapidly changing national and world situations involving underdeveloped peoples are likely to be most influential, and it is difficult to predict the ultimate effect of these altered situations on self-perception and behavioral change (E. Gordon, 1970, pp. 303, 304).

This position, that external and situational factors affecting a group can alter internal self-esteem, seems very sound. It is not necessary to engage in clinical or therapeutic procedures to alter self-concept; world events, remote from the individual, can do this. Through the process of identity, the "middle American" gets a lift from the moon landing, the persecuted Jew in Russia from the existence of Israel, the Chicano in Texas from the success of Chavez in California, the black ghetto dweller from the reemergence of African self-government. He then engages in new behaviors to enhance this newfound pride and dignity, and thus begins a series of developments whose ends are still in the future.

Bronfenbrenner's major position is that the problem of "disadvantaged families in this country can best be approached from

not only cognitive competence but also patterns of motivation and behavior appropriate to a productive, cooperative society" (1970a). He indicates that because of the family situation (and in this his information corresponds to that of Hess and Gordon), not only in disadvantaged but also in so-called advantaged families in the United States, the parent as potent modeler is not necessarily present nor functional. That is, parents may lack the time, skill, or inclination to establish warm emotional relationships with their children, and to provide them with standards of behavior. It is through these parental actions that the child acquires a view of self and world that later is turned into performance in appropriate situations. Without these actions, Bronfenbrenner predicts increased polarization between the generations and increased antisocial behavior in the young.

Environmental inputs begin at birth, and they are conveyed to the child by family or family surrogates who operate in terms of their own conditions of life, including ethnic, social class, national, and culture patterns. These inputs interact with the child's own developing organism so that he, in his own uniqueness, develops his own interpretation, his own synthesis of the experiences, and defines his self accordingly. He is, and

> . . . will be neither a simple product of the Huxleyian test tube nor the Skinnerian Walden. The body with which he is born will certainly influence the way he will organize and structure his world, but what we provide for him to organize and structure and the way we provide it will be the food upon which he grows. It is most likely that we will continue to consider him an active child and not merely a responsive child, which means that he will be selective in both what he learns and how he interprets what is available to him (I. Gordon, 1970b, p. 157).

Not only do the data seem to enable us to place body and world into a synthesis, but they allow us to obliterate the nice, neat dichotomy of cognitive and affective development. The words, attitudes, values, and aspirations, along with such terms as intelligence, academic performance, and test scores, all should highlight for us what Piaget has summarized so well.

> There is no behavior pattern, however intellectual, which does not involve affective factors as motives; but, reciprocally, there can be no affective states without the intervention of perceptions or comprehensions which constitute their cognitive structure. Behavior is therefore of a piece. . . . It is precisely this unity of behavior which makes the factors in development common to both the cognitive and the affective aspects (Piaget and Inhelder, 1969, p. 158).

Our new understanding then, takes us back to an older one, that the child is a total organization and that, although we may divide him up for the convenience of study, all of our categorizations are artificial constructs. The old progressive education slogan of "the whole child" emerges in new fashion as we reintegrate inner and outer, knowing and feeling, and recognize that the child's behavior always reflects his unique combination of all of these factors operating in relation to a specific situation.

Longitudinal Studies Reflecting the Status Quo

Most of the research cited earlier has been done either on small samples in longitudinal studies, in laboratory situations, or on large-scale studies such as Bronfenbrenner's. A characteristic approach of American developmental psychologists to the problem of relationships between early child experience and later personality and intellectual development has been through the medium of longitudinal studies of small samples.

Bloom's review (1964) summarized across many of these. Using correlation statistics, especially correlation between early and late measures on the same set of children, he reports the now oft-quoted finding that,

> By about age four, 50 percent of the variation in intelligence at age 17 is accounted for, [and] . . . in terms of intelligence measured at age 17, from conception to age four, the individual develops 50 percent of his mature intelligence; from ages four to eight he develops 30 percent, and from ages eight to 17 the remaining 20 percent. . . . we would expect the variations in the environments to have relatively little effect on the IQ after age eight, but we would expect such variation to have marked effect on the IQ before that age, with the greatest effect likely to take place between the ages of about one to five (Bloom, 1964, p. 68).

He further indicates that such personality variables as aggressiveness in males and dependence in females reach a point at about age three to four in which half of whatever accounts for the differences at age 17 is already present. From these longitudinal studies Bloom makes the assumption that the early years are fundamental and that, "in this writer's opinion, the most vital research problems in the behavioral sciences are those centered around the effects of early learning and early environments on humans" (p. 216).

Bloom accepts the "critical period" hypothesis. This hy-

pothesis, which originated in animal studies of imprinting, states that there may be a narrow time band for some critical behavior to be learned and, if experience should be lacking or altered, the function would not develop properly. This idea, combined with the longitudinal studies, Harlow's work with monkeys (1962), and Bowlby's with mother-infant attachment (1969), has led to the view that such a global set of behaviors, labeled intelligence or cognition, might also be subject to the hypothesis. However, the issue is unresolved because human behavior is complex, and intelligence and personality are not unitary behaviors.

Kagan and Moss (1962), while indicating that maternal protection in the first three years is related to dependence and conforming behavior for boys during the years six to 14 (this should be viewed in light of Bronfenbrenner's comments about the maternal overprotection of children in the Soviet Union), also indicate that the early school years are extremely important. They indicate that "developments during the age period six to ten induce important changes in the child's behavioral organization" (p. 272). They define the major events as identification with parents, the recognition that academic mastery is required, and the first real brush with a peer group.

Even though current research stresses the plasticity and malleability of the human infant and his capacity to learn and grow, we should not underestimate the amount of resiliency present throughout the years of development. For example, developmental biology contributes to our new understanding of language development. Lenneberg indicates that there may be a critical period, related to brain development, for language learning. Citing a mixture of neurological studies and training efforts with retarded or handicapped children, he suggests that two periods are important—before age four and finally before the early teens:

> A survey of children with a variety of handicaps shows that their grasp of how language works is intimately related to their general cognitive growth which, in turn, is partly dependent on physical maturation and partly on opportunities to interact with a stimulus-rich environment. . . . major milestones for language development are highly correlated with physical development. . . . Neurological material strongly suggests that something happens in the brain during the early teens that changes the propensity for language acquisition. We do not know the factors involved, but it is interesting that the critical period coincides with the time at which the human brain attains its final state of maturity in terms of structure, function, and biochemistry.

Apparently the maturation of the brain marks the end of regulation and locks certain functions into place (Lenneberg, 1969, p. 639). Stein and Susser (1970) summarize the intervention data and state:

> There is thus no good evidence so far to suggest that there is only one period of intellectual development sensitive to external intervention. Furthermore, a logical distinction should be made between factors that by chance affect the course of intellectual development and a deliberate treatment to alter that course. On present knowledge, intervention could be justified throughout the recognized period of mental development and possibly later.

Without necessarily leading to the adoption of the narrow "critical period" view, there are data showing the role of experience in the early years, not only on the behavior of the young child but also on his later performance.

Space does not permit an analysis of all of the data from the California growth study, but Schaefer's work (1959) led him to identify a cluster of maternal behaviors which he now (1969) finds related to performance of the child as young as three years of age. When mothers are described along a loving dimension and a controlling dimension, Schaefer finds that the least effective mother, in terms of her child's behavior and performance in a test situation, is the hostile, noninvolved one.

Generally, the longitudinal studies indicate that the early years *are* formative years; that what transpires during these years leaves its mark on both the behavior and attitudes of the child. However, these studies rest on correlation statistics of small, predominantly middle class samples. These studies utilized standardized measures and somewhat stable families. The California growth study, for example, was begun in the 1920's and has been remarkably successful in following the original children for a considerable number of years. The data reported by Kagan and Moss were gathered between 1929 and 1939. It is rather difficult to say that child-rearing conditions, the nature of society, and the nature of the family in the 1960's and early 1970's correspond in any significant fashion with the social milieu of the 1920's and 1930's. If Bronfenbrenner is right about the effects of television, for example, we need to be quite careful about overgeneralizing from data collected several decades ago. This factor will always be a problem in longitudinal research and should simply be seen by the reader as a caution rather than as a denial of results.

Other studies (Lavin, 1965; L. Murphy, 1962) also indicate the

relationships between family variables displayed early in life, and competence and achievement motivation demonstrated in the school years. Murphy, however, is careful to point out the role of the biological organism of the child as a significant factor in influencing the type of care he demands and responds to and, further, in influencing the child's own interpretation and coping behavior for handling his parents' style.

The data do not fully support a pessimistic "critical period" view confined to the first few years. The more optimistic notion that the first few years are important, but that change can continue to occur, leaves us far more time to affect development. This does not negate the early years, but places them in better perspective as the framework for later development. Development depends upon experience. Provision of early experience enhances development; lack of experience retards it. It may be that such retardation is temporary in humans, and can be overcome by later experience; but, as in sports, the game of "catch-up" is far harder to win than the game of staying ahead. When later experience, in the school years and beyond, is built upon the base of a good beginning, growth continues to be enhanced. As Piaget would say, not only is experience food for growth, but also possession of a competency is its own motivation for continued use of it.

If the early years are important [illegible] perience (although not confined to the narrow sense o[illegible] sociative learning) is essential to growth, what attemp[illegible]n made to apply this beyond the laboratory?

Attempts at Modification—Birth to Three

With the impetus of the "war on poverty," several studies were mounted in the middle and late 1960's to investigate the effects of different procedures for stimulation upon the development of the young child. Several studies focused on the years between birth and three: Syracuse University (Caldwell and Richmond, 1967; Caldwell, 1969); National Institute of Mental Health (Schaefer and Furfey, 1967; Schaefer, 1969); and the University of Florida (I. Gordon, 1967, 1969a). These studies are reviewed in I. Gordon (1970a).

The Syracuse approach was institutional day care for children beginning as young as six months of age. The major emphasis was on the cognitive development of the child in a group setting. Caldwell's data (1969) indicate that children profit from partici-

pation in such a program. Institutional care for very young children is not, as some feared, harmful to the development of the child, provided that a high quality program which stresses a good deal of affectionate relationship and stimulation is provided. The data also indicate that age of entry is not as crucial as some might think. Children who entered the program at a later age seem to make as much gain as children who entered earlier. The measures she used, however, are the traditional IQ measures; there are no measures on the social and emotional development of these children.

Schaefer and Gordon both utilized home visitors; Schaefer's were college-trained personnel who spent an hour a day working directly with children as young as 15 months of age, either in the presence of or without the mother. Schaefer's tutors developed their own curriculum, which included reading to children, excursions, games, and toy activities which they thought might be useful. There was no systematic theory of either content or instruction applied by his workers. What is especially important about Schaefer's work is the relationship between the mother's behavior during the program and the child's performance during testing. His data (Schaefer, 1969) indicate that there are correlations of a substantial order between the affectional and control situations provided by the mother as observed by the tutor, and both the behavior and the performance of the child at ages three and four in the testing situation. He found, as do all such studies, improvements in intellectual functioning as measured by standard intelligence measures.

At the University of Florida we utilized paraprofessionals who visited mothers on a once-a-week basis, teaching the mother a set of specific activities for her to use with her child, beginning as young as three months of age and continuing up to the age of two. These activities were built out of a mixture of our understanding of both Piaget's views of how learning occurs and his statements about the infancy period. Added to this was our concern for language acquisition.

Further, our aim was not only to provide an experience of an "intellectual" nature for the child but also to strengthen the mother-child bond. We wanted the mother to enjoy her child, and we felt that seeing him develop would enhance her self-esteem and strengthen her sense of adequacy. Our measures of maternal attitude and behavior during the sessions (as observed by the paraprofessional parent educators) and of child performance indicate that: (a) the use of paraprofessionals as parent educators in a home visit program is feasible, and such a program can be

mounted and sustained; (b) the effects of such a program are evident in the intellectual (standard IQ) performance of infants; and (c) mothers' feelings of personal control of their lives are enhanced and they change some of their living conditions. Further, observations of behavior show, as we would expect, wide variations in the family patterns, attitudes, and behavior in these homes. There is no single "culture of poverty" present. Analysis of these differences shows that, even within the "poverty" group, there is a correlation between the type of language interaction in the infant's home directed toward him and his performance on standard measures—Griffiths scales (age one) and Bayley scales (age two). The more verbal interaction, the higher the scores.

A most interesting and intriguing set of findings about sex differences emerged. Lally (1968) found that most of the gains in the first year were made by the girls. That is, treatment enhanced the performance of girl infants when compared to their controls, but did not do as much for the boys. Herman (1970) analyzed the maternal attitudes and observed behavior of the mothers in the experimental group and compared these measures to child performance (Bayley scales) at age two. She found that maternal attitude and behavior were of great importance in influencing the performance of the boys, but not of the girls. That is, the self-concept, feelings of control over own destiny, positive attitude toward the project, and quantity of verbal interaction of the mother toward her boy were all positively related to his performance within the experimental groups, but were generally not related for girls.

At the risk of leaping beyond the data, it might be conjectured that girls profit from the activities, regardless of maternal factors; boys profit from maternal attitude and behavior apart from the specific learning activities. If such a conjecture has any validity (and we are checking it out in a new research project), it has great significance for future programs of parent involvement. It may relate closely to the idea that enhancement can be indirect (as mentioned earlier in commenting on E. Gordon). That is, we should concern ourselves not only with the direct teaching of the child, but also, and maybe more importantly for the male, with enabling the mother to enhance herself. The question of the role of the father is not answered in any of these infancy intervention studies. A logical Freudian hypothesis would be that the father's self-esteem and behavior might be influencing his daughter. There is much yet to learn about what influences development, and how, in these early years.

One important outgrowth of the Florida parent education approach has been its use as a program model in Follow Through and Head Start Planned Variation programs. The concept of the paraprofessional parent educator as the link between home and school has worked well in its use by 11 communities in 10 states. Further, the curriculum and the parent educator role have been adapted by several of the Parent and Child Centers serving families that have children between birth and three years of age.

Other infant studies which are under way and which have reported preliminary results are Robinson (1969) and Weikart (1969b). Robinson's setting was group care; Weikart's was home visits by professionals. Generally, their results indicate intellectual gains; but their program elements have not been spelled out. Further infant work similar to Florida's is in progress at Peabody College. All these studies attempt, regardless of the particular learning theories held by the principal investigators, to provide a stimulated environment, either directly to the child or through the agency of the home. All report gains on conventional measures but leave untested a whole host of issues including the long-range practical effects of such programs on the children, the effects on families, and the resolution of a number of tough theoretical issues about the nature of development. These investigators, however, do not seem to assume the naïve one-to-one correspondence warned against by Lenneberg; that is, they do not believe they are providing specific skill training to the infant who will simply develop an associative chain of responses. They provide for language development mostly through what I term a language envelope; that is, they try to surround the child with models of adults who speak with him. This gives him the opportunity to develop the rules, regulations, and relationships among words. In this way he takes on the language of his culture so that he can function effectively in the larger society. This means that the type of language program in these early years is not simply imitation and learning labels, although some of this goes on, but a more general exposure to language related to the activities, situations, and events in which words are embedded.

Attempts at Modification—Three to Six

Parker (1970) has provided a summary from a number of the studies dealing with cognitive development in poor children between three and six. His review indicates the diversity which again reflects

the confusion in views about learning, the types of goals sought, and the naïveté which accompanied many of these early efforts. Several of these programs are well known, and a lengthy review is not possible here of such work as that of Bereiter and Engelmann, Montessori, the DARCEE studies, or the multitude of efforts under the general heading of Head Start and Title I.[1] Generally, the data indicate that systematic approaches, whatever they may be, seem to make an immediate impact upon the performance of children as measured in conventional fashion, that is, through standardized tests.

L. B. Miller (1970) found that, when Bereiter-Engelmann, Montessori, and DARCEE (Demonstration and Research Center for Early Education) classrooms were compared to "traditional" Head Start classrooms, all the systematic approaches produced more cognitive gains than did the traditional. Weikart (1969b), too, found that the particular curriculum (Bereiter-Engelmann or Piagetian) did not seem to matter. What seemed to make the difference was an organized, careful approach versus an unstructured orientation. The goals sketched out here for autonomy-relatedness, competence in its broadest view, and self-esteem are usually not measured in these studies. One of the problems is a lack of adequate assessment techniques in the area of self-concept. Virtually all studies pay lip-service to the notion that, either indirectly through some sort of warm environmental setting or the improvement of skill, or directly through some forms of affect training which grow out of analytic or encounter orientations, self-concept will be enhanced. Unfortunately, measurement is inadequate. Further, many of these studies define their goals in narrow specific subject matter fashion, and while it is true that they have demonstrated the ability to increase skill operation, only time will tell how long this effect lasts and whether or not it generalizes to other areas of the child's life. At the present time, the answer is that programs which focus only on the educational treatment may not either last or generalize. Stein and Susser (1970) conclude, "Intervention of a pedagogic type so far provides little evidence of accelerated development that continues self-sustained after the

[1] Several reviews are in preparation, and will appear in the revised edition of the AERA *Handbook of Research on Teaching*, R. M. W. Travers, editor, and in the NSSE 1972 yearbook on *Early Childhood Education*, Ira J. Gordon, chairman. See also the February 1970 issue of *Review of Educational Research*, Volume 40, Number 1, on "Education for Socially Disadvantaged Children."

program ends" (p. 49). They suggest that what may produce such development are programs that influence the total social environment and represent marked change in the child's social situation.

My purpose here is not to review the mass of studies and service projects undertaken under the general rubric of "compensatory education" in the past half-decade, but simply to indicate that, in spite of the fact that these efforts have begun, they are all preliminary and leave us with many unanswered questions and unresolved issues.

Most of the efforts to date do not show sustained gains, even in those areas on which the intervenors concentrated. The longitudinal study of the mix of group preschool experience plus a home visit program (Gray and Klaus, 1969) seems to lose its effect by the middle school years; the Head Start studies, even with all the methodological holes, suggest the same finding.

What seems to occur is that the children who were not involved in the intervention catch up as a result of schooling rather than that the involved children lose ground. This may simply indicate that the critical period is longer than we thought, or that some of our notions about learning are faulty. It may be that we cannot equate bits of information with money in the bank. They do not accumulate interest, but lie fallow unless further experience of a stimulating sort is provided. It may also be that performance is far more a function of the immediate situation than we conceived it to be. Desire for learning, a positive self-concept, and achievement motivation may not be deeply-ingrained, fundamental values that will persist in the face of environmental odds presented by schools, teachers, the street, and the neighborhood. These factors need continual bolstering in order to be sustained. One analogy may be nutrition. I cannot eat today for tomorrow, at least not for long. After I live off my own fat, I must have input. Our old fixed notions of intelligence may still be trapping us into thinking of both cognitive and motivational gains as fixed and finite, rather than subject to contemporary pushes and pulls.

One significant attempt to get at the effects of continued intervention in the elementary school years, to see if extended intervention leads to sustained gains, is the Follow Through program and its counterpart, Planned Variation in Head Start. Program developers who were seen by the U.S. Office of Education as innovators were asked, in January 1968, to develop public school adaptations of their research-oriented intervention projects. In order to assess the relative utility of different approaches in different

settings, these investigators became model sponsors. They linked up with public school systems which had been identified by state, regional, and national educational agencies as both eligible for and receptive to such an innovation. To indicate the spread, the Florida Parent Education program is being used in urban settings, both north and south (Philadelphia, Richmond, Jacksonville, Tampa, Chattanooga, and Houston); in small towns such as Jonesboro, Arkansas, Lawrenceburg, Indiana, and Yakima, Washington; on an Indian reservation (Lac du Flambeau, Wisconsin); and in a rural southern region (Winnsboro, South Carolina).

There are at this writing (June 1970) about 20 programs which have been developed in universities or research laboratories, both public and private, which are being tried out in selected public schools and communities across the nation. These range in orientation from those stemming out of operant viewpoints [sample sponsors are the Universities of Illinois (Becker and Engelmann), Kansas (Bushell), and Pittsburgh (L. Resnick)] through those which reflect in some fashion elements of progressive education [sample sponsors are Bank Street College of Education (Gilkerson), University of Arizona (Henderson), and the Educational Development Center (Armington)] to those which focus on parents as learners and partners (University of Florida), and finally those which seek complete community control (Washington, D.C.; local districts in New York City and Arkansas).

The political and other nonresearch issues make evaluation of even this program extremely difficult (Cohen, 1970). Nevertheless, Soar (1970) found that a number of the programs could be differentiated, on the basis of observation of the classroom behavior of teachers and pupils. His observer teams spent days in classrooms representing a sample of eight different programs. They used a modification of interaction analysis called the Reciprocal Categories System (Ober, 1968), a schedule built on the Bloom Cognitive Taxonomy (Brown *et al.*, 1967), the Teacher Practices Observation Record (Brown, 1968), and the Florida Affective Categories System (Soar, 1970). This allowed Soar to develop teacher-pupil behavior factors which reflected behavior in a wide range of primary classrooms in many parts of the country. Analysis of scores on these factors indicated that both the teacher behavior and pupil behavior vary depending upon the program. The data will be reported in detail in Soar's chapter for the 1972 NSSE Yearbook, and are not all in the public domain at this time. His current efforts are to relate these observed behaviors to pupil gains; and

the first indications are that there are definite relationships between control and instructional teacher styles and pupil growth.

As these data become available, they will lead to suggestions for optimum settings related to age and background of children and academic goals to be attained. They may enable us to say, "If you want to increase the cognitive abstract functioning of a second grade boy, then a classroom with moderate structure and an indirect, open-ended questioning pattern seems to be the best bet." Since the classroom is central to a number of these programs but not to all, this type of finding is important. But it does not cover all of the varieties of evaluation and measurement necessary for assessment of the impact of these projects. Further, my experience in the program indicates that, in spite of some notions of the so-called discreteness of these "models," there is an informal borrowing of ideas and techniques that blurs some of the lines among them. Classroom programs *are* concerned with parent involvement and parent education; community control eventually leads to selection of some form of program, parent education has to be placed in some content and control context. Nevertheless, this type of Follow Through effort should lead us to some better understandings of what happens when we attempt to modify the school, home, and community environment which surround the child.

Plans and Needs

At the risk of redundancy: we know for sure that the human infant is able to learn far more than we previously thought, that what he will learn is a function of his own biology (including the species-specific characteristic of language development) and of the general and specific experiences provided for him in the cultural setting. There seems to be some minimum input required during the critical growing-up years which, if not provided, affects the chances for achieving a full measure of competence. This input is both physical (nutritional) and psychological. For a child to become all he might possibly be, the early years before completion of physical growth seem to be critical because of the epigenetic view expressed above. Moreover, the nature of the interpersonal relationship between adult and child affects his motivational system and his point of view, which in turn can either enhance or limit his attempts to master.

Present methods of assessment in both the affective and cognitive domains are inadequate, particularly in the very early years,

because they do not take into account the epigenetic nature of development. It is, and will be, extremely difficult to build adequate assessment tools because what the child will become depends in so many ways upon what happens to him, and there is just no way of predicting this. At best we will get correlations similar to Bloom's, even if we modify environments, because such correlations still indicate that a large portion of variance is not accounted for by the early measure. In addition, a measure of "intelligence" usually accounts for little more than half the variance in general academic performance, let alone in performance throughout life. We are quite aware that there is little relationship between grades in college and later success, although it seems clear that school grades predict later school grades. Education is far broader than schooling, and learning takes place in the years before and after school and, during the school years, in the hours before and after school. It follows that our predilection to confine our measures to the academic may defeat our long-range goals of creating the kinds of settings to achieve what I believe are our purposes for the individual.

We also know that attempts to "compensate" reflect value systems, and include assumptions about relative inadequacy against some standard which itself may not be valid. Compensatory programs were originally designed on the assumption that the school's goals, values, and methods were right and that whatever deficiencies existed in the child's learning lay elsewhere. Now, in 1970, we are more and more aware that the school itself, as a social institution, may have failed not only many children but also the society at large. The school has not only not inculcated its own value system, it has antagonized and alienated many of the people it was built to serve. We now understand that the child's culture must be respected. Schools need to stress the diverse cultural groups which have contributed to the country. Development means building upon what is there; it does not mean negating and destroying what the child and his family know and value. Only as all agencies are involved in fostering learning, which includes a recognition by all that they mutually share the responsibility, can we enhance the development of all children. This requires institutional change, not narrow skill training in the classroom or on the TV screen.

Educators and psychologists do not have common sets of beliefs once you move past the broad generalizations contained in a transactional statement such as "Learning is a function of interaction between an organism and an environment." Although there seems to be some *rapprochement*, there are still distinct schools of

thought about the nature of learning and the learning process among psychologists and decidedly different views about appropriate methods of teaching among educators. When we move from the level of abstractions to the level of operations, the differences show up even more clearly. Since what we believe does tend to influence our practice, the fact that wide differences exist in belief offers us opportunities for the careful measurement of the relative effects on children of different systems of practice. This type of research, begun in relation to Follow Through, will be essential for the development of effective programs.

Differences in belief, then, should not be viewed pessimistically or as discouraging, but should be seen as opportunities to test as carefully as we can the relationships between various approaches to children and long-range outcomes. Obviously, however, so many facets of a child's life are not under the jurisdiction of the educator or researcher that the educator or researcher must be extremely careful when he claims that it has been his efforts which have brought about change. Further, if he is not careful, he may bring about change that is beneficial in one aspect but may have detrimental effects in others. For example, our efforts at slum clearance also contributed to the destruction of neighborhoods. We must be extremely careful that efforts at influencing a narrow band of cognitive skills are not equally destructive of other fundamental aspects of the child's development.

What do we need to translate belief into action? The crassest and easiest answer would be: money. However, large sums of money can be badly spent, and have been, by adopting a sprinkling process in which nobody gets enough to do anything or by utilizing a political orientation for dispersal as opposed to a scientific one. Some translations of belief into action are occurring in both laboratories and field settings. These should be encouraged, enlarged, and somehow related to each other in some effective communication network so that the findings are usable and generalizable, rather than buried in print usually two to three years after the work has been done.

I should like to answer this last question in a somewhat different fashion by pointing up general needs in several dimensions. These are: (a) a comprehensive view of learning, (b) increased parent power, (c) changed and changing educational institutions, and (d) new means of evaluation and relevant research designs, all of which will generate further "new understandings" and influence the widespread application of whatever new knowledge is created.

A Comprehensive View

We have long tended to view school as primarily intellectual and to see the deficits, if they exist, in so-called disadvantaged children to be principally in the cognitive domain. Most "compensatory" programs, especially Head Start, included enhanced or positive self-concept as a goal, but the major measurement devices always emphasized the cognitive area. Further, we see a push today for accountability and behavioral objectives, which usually become translated into narrow academic skills which can be readily measured but which, if Stein and Susser and others are correct, do not necessarily either generalize or last. What we need is to adopt a more comprehensive view in which education is seen as affecting the total life and life-style of the individual, his motivational system and his physical development, as well as his cognitive enhancement. Piaget and others have indicated the relationships between affect and cognition. If we learn from them, we will design programs for children which emphasize their own activity, their own desire for growth, their own push to inquire, their own search for mastery. We will have to provide them with opportunities, materials, and effective and inspiring teachers who will learn how to react spontaneously in challenging ways to the demands of children to learn. As Zigler states, "The child learns for the same reason that birds fly. You do not need to force learning upon the child. Learning is an inherent feature of being a human being" (Zigler, 1970a, p. 407).

The new comprehensive view should recognize the role of affect as the motivation force (Piaget and Inhelder, 1969). It will require that we design a learning environment that will transcend the limits of the school building and will eliminate the age-graded notion that formal education begins at entry into kindergarten or first grade. A comprehensive view of education will see it as cradle to the grave, all day every day, because learning does not get turned on and off in response to the clock or a set of bells or a physical location. Children and adults are learning all the time. They extract from the situations which surround them their fundamental attitudes, values, beliefs, and patterns of behavior. When we split "school" from "life," we sterilize the former. We make it a place in which academic games are played, in which what should be relevant is irrelevant, and in which what should be studied is eliminated. We create the climate which exists in so many of our high schools and colleges, and will be moving down into the grades, in which students are

constantly questioning but are receiving what are to them nonsense answers about what they are being asked to learn.

A comprehensive view would recognize that the school as a social agency, in partnership with the community, increasingly will take on the burden of providing comprehensive services—medical, dental, psychological, social—to the family as well as to the child. The principle is somewhat established in Head Start, in Follow Through, and in the Parent-Child Centers for very young children. At the present time we have confined this concept only to poverty families in the mistaken belief that middle class families do not need it because they are not "deprived," or because they can afford to purchase service on their own. The whole system of medical service in the United States, according to the report of President Nixon's recent commission, is completely antiquated. The delivery of medical services and the delivery of educational services will most likely come closer and closer together as we recognize the value of the old Latin slogan, "Mens sana in corpore sano"—A sound mind in a sound body. To assign the mind to school and the body someplace else makes little sense.

Further, as the adults in this society feel increasingly alienated from the youth, as individual families feel more and more need to come to grips with what is happening in this rapidly changing world, various educational services and psychological services will need to be provided on a scale that will transcend the private practitioner. We know that children who come to school overwrought because of tension in the family profit little. For us to assume that the society can deny its responsibilities to the child to enable him to be an effective learner by failing to provide adequate services to his family will cease to be an acceptable position in the next decade.

Increased Parent Power

Just now, the American family is under great stress, as Bronfenbrenner (1970b) has indicated, and as Hess' (1969) review of research supports. What should be the role of government through its schools in affecting family life? Hess warns that there are limitations "to what a program can accomplish by working directly and solely with families" (Hess, 1969, p. 42). He suggests that the school is going to become a stronger agency than the family, and is concerned that parental involvement might mean placing the mother in a dependent and suppliant role to the teacher, particularly when the latter is middle class and the former may not be. The

answer may be in our second dimension, increased parent power.

Traditionally, parents have been seen by professional school people as the suppliers of children and the supporters of bond issues, but as incapable of participating directly, either in the education of their own children or in decision making about the community's children. This view is under sharp attack at the present time. Organizations of adults representing different political and ideological viewpoints have long sought to influence the curriculum of the schools. These associations have usually been tied into the establishment and the power structure in some fashion so that they have been able to influence what is taught and who teaches. The current controversy over sex education, for example, is one demonstration of the power of the community to influence its schools.

Yet my concern is not only for this type of group action, but for first increasing the power of the parent to raise his own children. As school people, we have been guilty of saying to parents: "You are inadequate to teach your child; you don't know enough to teach your child, leave him to us." Unfortunately, in the ghetto and in many rural areas, what we have done when the child has been left to us has not demonstrated the wisdom of our approach. We told parents not to teach children to read, but it is quite obvious that the schools have not taught all children to read.

The first step is the organization of delivery systems and techniques for enabling parents to provide the kinds of emotional and intellectual situations in the early years before formal schooling so that the motivational, self-concept base and the basic skill bases will have been established in the child. Again, as Zigler indicates, early deprivation of affection, early failure, early threat, all contribute to damaging the child's ability to cope with school (1970a). A program in the Netherlands, for example, was designed to work with the parents of young children to produce what they called "a school resistant child" (Rupp, 1969), that is, one with so strong a self-concept and skill base that he can withstand even the bad schools! The programs described earlier in this article, especially those of Weikart and Susan Gray and our efforts in Florida, may be seen as aimed at strengthening the parent's abilities to provide the best developmental setting for the child. Similar programs exist in Israel and Ireland. Since such programs exist where there are no ethnic issues, I would suggest that some of the rhetoric in this country to the effect that such programs are arrogant put-downs against an ethnic minority is nonsense. Yet, as Hess (1969) has indicated, this approach may be insufficient.

The second element of increased parent power is to enable parents to learn how to use their resources to influence the other agencies which deal with their children. The model from Head Start and Follow Through is a useful guideline. The Policy Advisory Committee, of which half the membership must consist of parents of the children in the school, is a step in the right direction. The proposed day care legislation, which includes the establishment of state commissions on which parents must sit as members, is another step. Again, the President's Commission on health care has endorsed the position that the consumer must participate in decisions about the delivery of service.

We should move rapidly from a professional-client relationship in the old sense to what may be viewed as a professional-client relationship in the architectural sense. School people may view themselves as architects who attempt to work with the client to learn what it is the client wants built, what reflects the client's concerns, personality, life-style, and aspirations, and who then provide the professional expertise to build the dream house. The structure takes both; but the architect, if he does his job well, does not diminish his client, does *not* substitute his values for his client's, but attempts to build the best structure that his client desires. In the process, he educates his client about what it takes to build such a building, what kinds of choices are involved, what decisions have to be made, what sacrifices. In a sound relationship, architect and client enhance each other. We need to so redesign our school system and our relationships with parents that we resemble that model rather than a medical model of assuming ultimate wisdom. How will this comprehensive program, based upon the influence of the parents, come about? What will some of its ingredients be?

Changing Institutions

Educational Day Care

One emerging institution in its birth pangs now is the developmental day care center with a comprehensive educational focus. Legislation being considered in both Houses of the Congress stresses this. Conferences in the summer of 1970 had it as their focus. Social security funds and private foundation support for pilot projects and tryouts are being made available. Industry is moving not only to set up such centers near its own plants but also, through franchises and other techniques, to provide such service on a profit-

making basis. We know that children as young as six months of age can participate in such programs. We know, further, that institutions can also be extremely damaging when the adult-child ratios are inadequate, when no stimulation is provided, or when such institutions serve as baby-sitting facilities.

One way in which parents can play a valued role is by serving on the boards for decision making for such day care centers and further, in keeping with the old parent-cooperative nursery school program, by participating in the staffing and operation of the center. However, this does not need to rest on volunteers. One extremely suitable form of employment for parents who seek to serve and yet wish to remain close to their own children is in such day care work. We have a variety of models, from the small home-centered operation for five or fewer children to the large-scale center for hundreds. Our needs in establishing and maintaining such centers are in the training of personnel, development of suitable curricula, establishment of high standards of physical care, and development of close ties between family and the agency.

Such day care centers can serve as focal points for a neighborhood or a community, in which people of all ages can unite to serve their young. As Bronfenbrenner indicated, a major component of a good intervention program should include "employing the superordinate goal of concern for young children as a means for involving the entire community in the examination of the opportunities it offers to its children, and of the ways in which these opportunities can be enhanced and extended to all children and their families" (Bronfenbrenner, 1970a, p. 70).

Use of Media

The new understanding of education as total should also break down the traditional school walls. Media such as television have not yet been used effectively or systematically for the education of the young, or of all members of the nation. We learn much from television, as we learn from other sources, but it has been mostly haphazard and beamed to large-scale audiences. Even the highly-lauded "Sesame Street" is not the final answer. If we wish to increase the potency of a parent, then we need to design programs that teach parents ways to relate to their children and use the kinds of activities which foster movement toward the goals. Further, if we believe that young children learn best through a combination of modeling and active involvement and the joy of repetition, then

the high speed, rapid-fire technique, "Sesame Street"-type program may not be the most useful approach. Earl Kelley years ago described the early educational television experiment of the airplane circling the five Midwestern states as "intellectual crop-dusting." If he were alive now he might call "Sesame Street" the sugarcoated, quick-dissolving vitamin pill.

Electronic technology is reaching the point where in the next few years it will be economically feasible to have video cassettes in the same way we now have audio cassettes. We all know the joy of playing a favorite piece of music again and again. Video cassettes will allow the child to look at a favorite activity again and again. They will allow parents to study a procedure for working with their child again and again and model upon it, if it seems satisfactory and appropriate to them. In this way the learner controls his own rate, time, and amount of input. We can individualize instruction in the home in a fashion somewhat similar to our efforts to do it in some of our schools.

Further, the need to strengthen the link between educational agency and home can also be partly met via public broadcasting. All of us who have been teachers or parents know how easy it is to increase attendance at a PTA meeting by having the children put on a show. Parents will come to watch their children perform. This is an extremely motivating activity. Why not put this to use in a more educative fashion? If parents are to participate in decision making, if they are to be a new type of client and the teacher is to be a new type of architect, then they need to know what the product looks like and what the process of education involves. Often, because parents are working, they cannot visit the school. When they do come, they see an unselected sample that may not be pertinent or typical. We can use public broadcasting or closed-circuit television to inform parents about the activities and learning of their own children in school (including the day care center for very young children).

A way to do this, for example, would be to select a particular activity that the teacher wishes to have parents see because it represents the essence of what those who are working with the children are trying to do. This might be videotaped in the agency setting for about half an hour. Notes would then be sent home with each child, not only from that group but also to the parents of all children in the facility, that Mrs. Jones' room will be seen on Channel 5 at 7 p.m., and all are asked to watch. Announcements could also be made in the press and on the radio. The broadcast

from 7 to 7:30 would be followed by a half-hour of an open line in which interested parents or community members could call in and ask the teachers about what was seen. The program could be followed up with group sessions or other communication techniques for continuing the exchange between home and school.

In the Florida parent program the already established link of the parent educator could be used to keep the action going. Such broadcasts might be arranged so that each group in the agency in turn is seen on a weekly schedule. This would lead into new demands by parents for information about schools and schooling, and an increase, hopefully, in their active involvement in the educative process.

New Forms in Adult Education

The combination of increased parent power and increased communication should lead us into the recognition that our present models of adult education are inadequate for the job of the future. At present, our junior colleges are offering wide varieties of work based upon individual demand, either in such homemaking areas as sewing, cooking, and vocational and technical skills, or in general individual enrichment programs. By no means am I implying that these should not be continued and expanded; but what is needed are group-centered programs as well, designed to teach adults how to participate in planning, how to take part in decision making, how to learn the channels for appropriate action, what laws exist, and how they can be used.

Those of us who are professionals are well aware of our own difficulties in untangling federal governmentese, or in communicating from the jargon of one discipline to another. Even though this is our vocation we have trouble with it. How much more trouble does this create for people for whom the language and forms are alien to their daily pattern? This should not be taken to mean that alien carries any notion of inadequacy, but we need to recognize that educational guidelines, federal guidelines, are in a tongue that needs translation.

I came across some material, in March 1970, from the United Bronx Parents, on how to make a school visit and how to understand school policy. We need a good deal more of this type of information so that parents who wish to do so can play vital roles in the efforts of the community to regain the control of its schools which it had in earlier and simpler times in our history. The principle of com-

munity control is not new. The New England town meetings exemplified it. What has happened is that the development of an educational establishment to implement the community's plans has led to the creation of conflicting centers of interest which now need to be reconciled again to serve the society and the society's children. Educational agencies, therefore, need to establish means, either through the media techniques mentioned above, through individual home visit programs, or through group meetings, for informing parents and other interested community people of the processes for participating in and influencing school decisions. If we fail to do this, we may find ourselves faced more and more with the kind of angry confrontation from both right and left which may tend to destroy the institution rather than invigorate and enhance it in doing its job.

Maybe a first step is the rewriting of material from jargon into straightforward language. I would suggest that all of us reread Strunk and White (1959), and in our own messages try to use the points they make. When we think we are giving information we should continually engage in self-questioning to find out whether what we have said has been understood. Adult education, then, means not only the education of the community, but also the reeducation of the professional.

An important phase of working with parents in developing new relationships involves understanding the roles and behavior of those who for their own ends wish to destroy the system. Parents need just as much help to cope with the demagogues in their own midst as they do to cope with the system. Arrogance is not an exclusive trait of any one group. It is often easy for an organized, strident minority to seize control of a new committee, to attract attention, and to ruin the development of cross-group ties. Professionals need to realize that such forces prey not only on the reasonable frustrations of parents, but also on the possible guilt feelings and self-doubts of professionals. As we learn to change, then, we may be in for some hard times, and we need to be clear about what we seek.

Education for Effective Family Life

Since the late 1950's, we have retreated in our high schools from the label "life adjustment," which fell into discredit after the orbiting of the first sputnik. In our attempts to reintellectualize our high school curriculum (as if it had ever been anything but aca-

demic), in our efforts to increase the substance in the science and math courses, we have perhaps lost sight of the fundamental need of adolescents to establish their self-identity and self-worth. In order to do this effectively within the framework of the society, young people must have some productive and contributing role rather than simply a hedonistic and consumer role. When young people are kept as dependent consumers of information, a good deal of which they see as irrelevant, high schools come more and more to resemble outmoded institutions in which order is maintained through aversive and coercive techniques, in the absence of that order which comes from involvement in meaningful experience.

If our view of learning transcends the school, then learning experience for adolescents must also transcend the school. One useful way to combine the development of identity and competence, a resolution of self and other, is through the use of adolescents as participants in the educational day care program. This should not be simply a service club or extracurricular activity; nor should it be a make-work for income, Mickey Mouse arrangement for "poverty" teen-agers; it should be built in as a basic part of what happens in the high school education of all children.

There now exists a basic set of materials drawn from several of the research and development projects which can be taught to adolescents to use in interacting with infants and very young children. We have the need for manpower and the opportunity to enable the community to serve as a school. We should, therefore, make arrangements to strengthen education for effective family life by teaching teen-agers in realistic settings how to care for children, how to provide the kinds of stimulating and warm environments which nurture the growth of children, how to extend themselves and feel responsible for somebody else of a different and younger age, how to relate to the adults who work consistently with these children so that all are engaged in activities beyond themselves. Working with infants and young children, seeing them respond, feeling their affection, can "turn on" a teen-ager in far better ways than taking the drug route. He can see that he makes an impact. He can develop pride in accomplishment. He can discover the relevance of what it is he is doing.

Organizing such programs has already begun in several places in tentative fashion, but the programs have usually been conceived of as outside the normal realm of the academic program. Even tutoring programs in college, where they are supposed to have

been part of course work, very often run parallel to and outside of what occurs in the classroom. What we need are ways to recognize that the day care center, the community playground, the recreation center, and the local ball field are all classrooms, and that activities in which older youngsters work and teach younger ones are basic to the education of both. If we mean by a sound family life a feeling of responsibility and relatedness between the generations, then we must find a variety of ways to provide experience in such activities.

The Use of Paraprofessionals

Many of the Head Start, Title I, and Model Cities programs have brought aides into the classroom. Early efforts were designed simply to relieve the teacher of clerical activities, or to handle staff problems. Efforts in Head Start and Follow Through have shifted the focus somewhat to recognizing the contributions that community people can play in teaching teachers about the community and about the children. Gartner and Riessman have sketched out the possible roles for paraprofessionals in the schools of the next decade. They say:

> The employment of paraprofessionals contributes to the development of a differential staffing pattern for the schools, one of the important new developments in education.
>
> From the point of view of the community, the introduction of paraprofessionals brings its people into the school in a participating and essential manner where the training and education essential to a career advancement program take place, the paraprofessionals from the community gain skills and ability, thus building the human resources of the community, an essential need of the ghettos and barrios of America (Gartner and Riessman, 1970, p. 280).

Our experience at the University of Florida in the Infant and Early Child programs, Follow Through, and Head Start Planned Variation leads me to support strongly what these writers have to say. It is important that the role of the paraprofessional not be confined to the low status housekeeping and maid type activities, which have to occur in any room. What is needed is the recognition that paraprofessionals can play a variety of roles including individual and small group instruction. Their introduction into the school means a reorganization of patterns of instruction, patterns of organization, and patterns of curriculum development. Their employment does not mean providing the teacher with a private

housekeeper. This introduction of other adults into the classroom must be seen in relationship to the comprehensive view, increased parent power, and the needs in adult education. All of these must be seen as elements in a system closely interrelated, leading to a reorganization, rather than as additions to the already set structure of the system. They all must be seen in relation to education for diversity.

Education for Diversity

There are several ways in which we can view diversity. First, in the earlier discussion on genetics, the individual's own uniqueness was stressed. Second, in the discussion of the role of culture and subculture, the uniqueness of the value system of each ethnic group within the American Society was stressed. Education for diversity must utilize and capitalize on both individual and group strengths, and develop programs which allow us to achieve what we have long used as a slogan but denied in action, the maximum development of each individual. To educate for diversity means the abandonment, to some degree, of a notion that all children will learn exactly the same thing, and that individuality is simply a matter of rate rather than content.

The view of individualized instruction as related to rate is somewhat tied up with our current concern for behavioral objectives, for programmed instruction, for individualization built on packaged materials in which the child's timing of entry is based upon diagnosis but in which the choice of entry is not his decision. Peck, in describing personalized education, seems to adopt the view that what personalizes it is the diagnosing technique, the auditing, the decision making of the teacher to select the proper units of instruction for the child. He does indicate that:

> Large and appropriate variations need to be discovered and implemented to take account of the vast differences among children from different ethnic groups, different levels of language mastery, and from homes with value systems which differ greatly from the traditional value systems of middle class teachers (Peck, 1970, p. 648).

The problem, however, is the Procrustean-bed philosophy which lies behind that view. This philosophy states that we need to recognize that children come from different backgrounds, but the aim of education is so to deal with them as individuals that they will emerge looking alike. Account of their individuality is

taken to determine a single approach to them, but one does not take account of their individuality in the more creative fashion of encouraging and enhancing their diversity.

Lesser, on the other hand, following up on his own research on group differences, suggests that educational diversity "if successful . . . may conflict with our long-standing principle of educational equality. If successful, educational diversity may—indeed, it should—develop and enlarge existing diversities among children" (Lesser, 1970, p. 540). He is concerned with group differences, but I am concerned with individual differences. The diversities among children transcend class and caste lines.

One other view of diversity recognizes that, because of the background of experience of children, they come to school with widely different motivations and skills. Our present assessments, from the value system of the school, have placed some in superior and others in inferior positions. Education for diversity would mean the training of teachers to recognize and understand what elements in a child's behavior might most likely be functions of his cultural value system and learning experience, and thus need to be honored, even though the aim of the school may be to demonstrate and offer to him other ways of looking at the world, other avenues for expression, other techniques for communication. If we truly educate for diversity, major goals should be to enable all members of our society to be able to understand and relate to each other, to honor diversity, to recognize distinct contributions, to learn from each other, to enhance the separateness and individuality as well as to enhance the common mainstream.

This means that while educational agencies must honor what is special about a culture, they still need to teach the kinds of experiences which allow for cross-subcultural understanding and communication. If diversity is interpreted as complete separateness, then we will lose some of the cement necessary to maintain the society. If diversity can be understood as uniqueness within commonness, then we may be able to attain our goal.

Bernstein, for example, concerned because his writings of the early 1960's had been used in this country to imply that lower class language was inferior rather than different, says that:

> Now because the subcultural culture, through its forms of social integration, generates a restricted code, it does not mean that the result in speech and meaning system is linguistically or culturally deprived, that the children have nothing to offer the school, that their imaginings

are not significant. . . . There is nothing, but nothing, in the dialect as such, which prevents a child from internalizing and learning to use universalistic meanings. But if the contexts of learning—for example, the reading of books—are not contexts which are triggers for the children's imaginings . . . then the child is not at home in the educational world. . . . If the culture of the teacher is to become part of the consciousness of the child, then the culture of the child must first be in the consciousness of the teacher. . . . We do not know what a child is capable of, as we have as yet no theory which enables us to create sets of optimal learning environments (Bernstein, 1970, p. 347).

What I hope will happen is that teacher and child will each learn the language of the other, and that we will not misuse cultural relativity to assume that each can go his separate way.

The most effective time to begin this process of cultural interchange is in what we have formerly called the preschool years, when the interests of all can be brought to bear upon the development of all children. Teachers and parents can learn from each other, and children can learn from each other, beginning in the home and day care center.

Relevant Evaluation and Research Design

I said earlier that we should move toward an architectural model of community-school relations, and away from the medical model. Messick (1970) suggests, however, that in the area of evaluation and research, we should move toward the medical model, and away from our engineering input-output one. Since we do not know what children can become, and since we are not at all clear as to what are the optimal conditions for learning, Messick's strategy is sound. Utilizing pre-and-post measures, our usual laboratory design, borrowed from older sciences which have moved somewhat away from it, assumes a knowledge of what the given product should be and, therefore, has some appropriateness. This design fits in with the viewpoint of those who think they can spell out goals and use such terms as accountability. The design does not lend itself to the kind of flexibility we need as we are changing institutions, developing new models, and attempting to get immediate feedback as to what works and what does not work, and under what given conditions different treatments seem to work. We need to be aware of the side effects of what we are doing. When Messick suggests the medical model, it might help us in this way. We know that

the prescription of the physician relates not only to the symptoms but also to everything he knows about the person with the illness.

Another approach is the model of quality control, although this may smack more of an industrial and assembly line approach. In either case, we need to design our research and evaluation so that we are constantly taking process samples of what is going on, and making some judgment as to whether that is what we had in mind, whether it is moving toward our goals, and whether we wish to continue on that path. If, for example, we find that an individual teacher working with a group develops what works for him, but which does not fit a prescribed model, our new form of evaluation would suggest that we study why it is working for him, what parts of it are generalizable and useful to others, rather than retrain him to represent the model.

A second problem in the pre-and-post measure design is, when is "post" actually post? When do we stop measuring? Characteristically, in learning research and in most educational research, we have taken our post measure immediately after the experience. However, we should be warned by what we now know about long-range effects. We need to recognize that post is a long time in the future and not at the end of treatment. The ultimate test may be whether we have achieved the goals indicated at the beginning of this paper, or approximately the same goals, as stated by Bruner: "The objective is to produce skill in our citizens, skill in the achieving of goals of personal significance, and of assuring a society in which personal significance can still be possible" (Bruner, 1970, p. 79). If that is the case, then much of our present measurement is a far cry from what we need.

We need new measures that not only relate more closely to our objectives, but that also tackle the problem of measurement in a different fashion. If we want actions as our test, then more and more we need to look to unobtrusive measures, to action-oriented measures. How *do* children behave? How *do* parents work with schools? How *do* teachers communicate? How do people vote? How active do they become? How do people spend their time? All of these offer avenues for measurement above and beyond the academic. When translated into early learning, this may mean that the choices the young child makes, the way he relates to another, the autonomy with which he pursues an activity, the ability he has for attending to a task for a long period of time, may be better measures than the recognition of the letter A or the rote recitation of numbers one through ten. This is not to deny that he may need

these skills, but it suggests that they are insufficient measures of what we should provide for him and of what he may become.

Our standard evaluation techniques have been entering and exit measures. We need to devote considerably more time to the observation of process. Rosenshine (1970), in his review of classroom observation data, indicates three major needs:

> Greater specification of the teaching strategies to be used with instructional materials, improved observation instruments that attend to the context of interactions and describe classroom interactions in more appropriate frequency counts, and more research into the relationship between classroom events and student outcome measures (Rosenshine, 1970, p. 296).

Soar's (1970) analysis of several Follow Through models indicates that it is possible to develop factors within various systematic observation schedules which highlight the model-specific differences in teacher and pupil behavior. Although between-teacher variation in any given program no doubt will continue to be large, the between-program differences are such that we can begin to move to process measures along with our characteristic techniques. However, the measures mentioned above are confined to the classroom. We need substantially more approaches to the nonclassroom settings which are equally influential in the learning situation.

We are currently designing, at the University of Florida, different measures for assessing mother-young child interaction in teaching settings, some of which are based upon Schaefer's (1959) work and others on Hess *et al.* (1968). These measures include both the verbal and the nonverbal behavior of adults and reflect our concern with the affective as well as the cognitive domain. They represent beginnings. The orientation of Barker and his colleagues (1954) also needs to be extended considerably so that we have better pictures of the behavior settings in which actions can take place and so that we can learn to describe these settings in more useful fashion. Kounin's (1970) application is particularly useful. The approach of Gewirtz (1968) in his very careful analysis of behavior settings also needs to be expanded. It is far too early to indicate which, if any, of these approaches will prove most useful. We need to try a variety of techniques and gradually sift down to those which seem to offer the best predictions for action programs.

Many of our attempts at measurement and observation grow out of psychological and sociological theories which include, per-

haps unconsciously, the value orientations of the investigators. We tend to think that behaviors that we know or use are the appropriate ones, and that other patterns are therefore either inappropriate or deficient. We need to adopt and develop the kinds of measures which are culturally relevant, so that we can see which behaviors, imbedded within a particular culture, yield which kinds of movement toward the general goals. We know from anthropology that there are many varieties of family patterns, many patterns of child rearing, and that somehow children reach adult status and function effectively in these different cultures. Our problem is that we are a culturally pluralistic society and children have to function as adults, not simply within their own subculture, but in interaction with members of the other cultures.

We need to find out what patterns within the subculture work effectively to accomplish this goal, rather than simply those that permit survival or growth within the group. This is not to deny that the goal of survival and growth within the group is important, because without it the second step of interaction will not take place. However, mere "survival and growth" may be an insufficient goal. Children have to "make it" in the larger society, and need those skills, concepts, and attitudes which are necessary. No culture can survive without competent people. However, movement toward culturally relevant measures should demonstrate to us that there is no single pattern that one must follow to arrive at autonomy, relevance, competence, and self-esteem. To assume that there is one sequence of events that will do this is to deny the plasticity and individuality of man.

We need to develop new notions of predictive validity which take into account all the other factors besides child performance on an academic measure which influence "making it" in the society at large. It is clear that our current measures of intellectual development for the very early years have no predictive validity. Although Bloom's study shows that half the variance at age 17 is accounted for on measures at age 4 in the area of intellectual measurement, intervention may change even that statistic. We should not assume that what we are teaching in the very early years is a specific skill that will continue to be used in the same fashion in later years. We are enabling the child to build his organization, his approaches to learning, those attitudes which lead to growth. These are the structures upon which later skills get built. Measures of specific bits of behavior may never be predictive of later performance unless these bits are somehow or

other organized so that they add up to patterns which are similar to later patterns. For example, if we hope that people will be task-oriented when it is appropriate, then perhaps Schaefer's measure of task-oriented behavior in the test situation may be more useful in the long run than the test score itself. If we wish people to feel related to others, then some measures of the way children approach others and deal with others' feelings may be more predictive than whether or not they know some particular motor skill or can make some perceptual discrimination.

The cautions are beginning to become obvious; over-attention to one domain or to narrow behavioral goals may lead us astray from seeking those observations of child behavior which have relevance to later functioning. This orientation, of course, requires a developmental epigenetic point of view, and assumes that early experience and early patterns relate to adult behavior. It assumes that the child is indeed the father of the man. It does not, however, require the pessimistic view of locking in on early behavior and the denial of change. It suggests that if we are wise enough to understand early patterns, we can have better information for designing experience to enhance those patterns which relate to the goals, and to modify those which may make it difficult for any individual youngster to reach his optimum potential.

In this paper I have attempted to sketch out a philosophical position about the goals of development, to indicate what data and new understandings currently exist about the nature of development and particularly about the role of education and intervention as a force in influencing development. I have suggested that a static view of man or a purely "natural" view of man is an inadequate model for decision making. Man has more flexibility than we have used. Our present system has not capitalized on either his biochemical uniqueness or the special contributions of his subculture to his total individuality.

We need to rethink our notions of education to include a broad spectrum of ages and experiences, to change and modify our current institutions, and to shift our notions of how we measure what we are doing. I have suggested that a brief review of the compensatory and stimulation studies in early childhood indicates that educational attack is insufficient and that confining ourselves to a cognitive domain is inadequate.

We need to involve the parents and the general community much more than we have done in all phases of the educational

process, including decision making. We need to learn to exploit our technology, to use our human resources, and to set our sights far higher than we have. Our current understanding is that human potentiality is modifiable, but we are not able at this time to predict what we might become. We will only find this out as we embark on efforts in keeping with the American pragmatic position, to see what we can do when we try!

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